Recently, historical archaeologists have recognized the importance of analyzing bottle assemblages (Baugher-Perlin 1982:259-260). Not only do bottles provide data for studying chronology, but shape analysis can determine a bottle's function. By the second half of the nineteenth century, the use of bottles as storage containers began to replace ceramic bottles and jugs. Recent work in Wilmington, Delaware revealed that in urban sites, bottle glass was more frequently used than ceramics after 1870 (LeeDecker et al. 1987:250-252). Garrow (1982:185-186) suggested that as the nineteenth century proceeded, bottle manufacturing technology improved, resulting in lower bottle costs. As glass became less expensive and more available due to improvements in the manufacturing process, continued re-use became unnecessary, increasing the amount of glass found on late-nineteenth and twentieth century sites.

A variety of glass containers, other than bottles, were found in great proportions at historical sites. Functional differences were readily apparent in drinking glasses. Glass tableware, serving vessels, and decorative items were as common as ceramic vessels of the same function in households of the late nineteenth and twentieth centuries. The addition of glass containers created problems in vessel function analysis of late-nineteenth and twentieth century archaeological sites, particularly if a large portion of the vessel assemblages were glass not considered in the analysis along with ceramic vessels (Catts and Custer 1990; Hoseth et al. 1990).

In order to address the changing consumption habits of the late nineteenth century, a second series of difference-of-proportion tests were executed, using the abundance of glass bottles and vessels excavated from the Cazier site. This was accomplished by comparing and contrasting the Cazier site's glass vessel assemblages, vessel use and function, with local historical archaeological sites with similar occupation dates and comparable artifact information. The sites chosen for this analysis include the Allen site (Basalik et al. 1988) and Lots 304 and 306 King Street in Delaware (Berger and Associates 1985).

This analysis investigated the ratios of specific glass vessel functions including beverage containers, food containers, medicinal bottles, and household items. Additionally, alcoholic beverage bottles were compared with non-alcoholic beverage bottles. The ratio of drinking containers to beverage containers were compared, as well as drinking containers to tableware items. The percentage values and vessel frequencies used in the comparison are listed in Table 29, and Table 30 lists the test statistics for each of the paired site comparisons for each paired vessel category. As with the ceramic analysis, test statistic values greater than 1.96 indicated a significant difference-of-proportion. Twenty-one significant differences between functional categories were observed, out of a possible 26 pairings.

Table 31 shows the similarities and differences between the glass assemblages by ranking the sites with respect to each vessel function category. Table 32 shows the frequencies of significant similarities among each pair of sites; higher values indicated sites that were most similar. Three similarities were observed between the King and Allen assemblages; the categories included medicinal, alcoholic bottles and non-alcoholic bottles. Cazier shared only one similarity with the Allen site, in the food container category. The three compared sites did not show any similarities to each other in the beverage, household, drinking, and tableware function categories.

Although the data base for this analysis was very small, consisting of only three sites, some observations could be made. The three sites compared included one rural site (Cazier), one urban site (Lots 304 and 306 King Street) and one village outskirt site (Allen). The difference-of-proportion test clearly revealed the distinctiveness of each site based on their glass vessel discards. The test provided ten possible comparison opportunities, and only four categories showed similarities between the sites. Of the four similarities, three were between King Street and Allen. Cazier was similar to Allen in the food container category only and did not show any similarities with King Street. One tentative conclusion based on this analysis was that differences in the social relationships and activities of rural and urban dwellers in Delaware during the late-nineteenth and early-twentieth centuries can be observed by studying the glass vessel remains. This analysis indicates that when the glass vessel assemblages of urban, village and rural sites are compared, the village and urban sites are more similar.

CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

The results of the data recovery excavations at the Cazier site contributed to the understanding of tenant life in rural Delaware in the nineteenth and twentieth centuries. More specifically, the changing disposal patterns,

consumption habits, spatial utilization, and material culture processes of black laborers and their families were revealed in the archaeological record. Each of these processes related to two primary research domains within historical archaeological research in the Upper Peninsula zone, Domestic Economy and Landscape (De Cunzo and Catts 1990). These research domains will in turn yield data significant to current historical and archaeological research in the Industrial and early urbanization Period, 1830-1880 +/- and the urbanization and Early Suburbanization Period of 1880-1940 defined by Ames et al. (1989:30-37).

The research program proposed in the Management Plan for Delaware's Historical Archaeological Resources (De Cunzo and Catts 1990) emphasized the importance of understanding the phenomenon of tenancy in all the geographic, environmental, occupational, socioeconomic, ethnic, and temporal variability. The Cazier site spanned a critical period of change in nineteenth and early twentieth century Delaware. The development of strong regional urban markets beginning in the 1840s brought tremendous social and economic change to Delaware and the Mid-Atlantic region.

The opening of the Chesapeake and Delaware Canal in 1829 and the construction of Delaware's first railroad in 1832, the New Castle and French Town Railroad, were key events in these social and economic changes. Improved transportation brought new commercial opportunities to expanding urban markets. Located in the Upper Peninsula grain region, Pencader farmers, including Henry and Jacob Cazier, benefited from the proximity of the extensive road networks, the canal, and the many rail lines. The farms were large, cultivating an average of three times (150 acres) more acreage per farm than the other regions of the state (Herman et al. 1989:31). Gentleman farmer/scientific agriculturists, such as Henry and Jacob Cazier, evolved into agrarian capitalists. In certain areas of the Upper Peninsula Zone, the economic and social power of the landed few produced tenancy rates as high as 80 percent (Herman et al. 1989:33). Tax assessments of 1856 reported that Henry Cazier owned eight properties in Pencader Hundred, a total of 1,200 acres of land. The Cazier site (7NC-F-64) was one of these tenant properties.

Henry and Sarah Cazier were prominent landowners in Pencader Hundred. Most of the land was inherited from Henry's great-great-grandfather Mathias Van Bibber, one of the early Dutch settlers of Delaware. A large property north of the Chesapeake and Delaware Canal, "White Hall", was the home of Henry Cazier. Cazier himself aided in the construction of the canal and made a sizable profit in the process. The Caziers were members of the Pencader Presbyterian Church by 1833. Cazier's substantial donations to the rebuilding fund led to the construction of the new Presbyterian Church, following the destruction of the original church by fire in 1852. He served as a Ruling Elder of the Board of Trustees of the church he helped to rebuild.

It was during this time of agricultural reform and changing markets, that Henry Cazier built his mansion, Mount Vernon Place. Cazier's mansion became the showplace of Pencader Hundred (Cooch 1936). Formal balls and garden parties were held in the splendor of the mansion and grounds. The elite of Delaware, including doctors, lawyers, politicians, and governors, attended these functions. While constructing Mount Vernon Place in 1844, Cazier built a small brick house at the entrance to his mansion at the junction of Glasgow-Summit Bridge Road (Route 896) and the entrance to the lane that led to his mansion. The tenants of this house, the Jacob B. Cazier Tenancy site, were required to open and close the big wooden gates of Cazier's entrance lane as part of the rental agreement. The small (17' x 17') gate-house was built of the same brick that formed the walls of the mansion. The size and construction of the house was in accordance to other servant quarters of the time. Cazier carefully designed and constructed the house to reflect his position in the community. The small yard was fenced all around, perhaps required to be kept neat and tidy. Cazier knew that the gate-house would be the first feature of his estate visible to travelers from Glasgow Road (Route 896). The house was thus a reflection of the status of Henry Cazier, not of the occupants.

Henry Cazier died in 1859, leaving his wealth, land, and mansion to his son, Jacob B. Cazier. Jacob was 26 years old, considered himself to be a gentleman farmer, and continued to add to his father's landholdings. The same concern for appearance and the visual impact of his estate led Jacob Cazier to carefully maintain his tenancy.

By the agricultural census of 1880, farm values had dropped to their 1850 levels. Nationwide financial panic in 1873 affected regional urban markets. The Depression years of the 1890's and 1930's disturbed the local landholding patterns of the area, resulting in the diversification of land ownership and the reallocation of property (Herman et al. 1989:35). These regional economic changes were reflected in the land holdings of the Cazier family. Tax assessments

of 1881 listed 1,225 acres in the possession of Jacob B. Cazier. But one year later, in 1882, the Delaware State Directory reported 9,908 acres belonging to the Kirkwood area farmers. J.B. Cazier owned almost one third of those acres, suggesting that Cazier benefited from the economic decline during the late nineteenth century. Jacob refurbished the mansion and the gardens in 1878. He continued to hold elegant balls and garden parties, as his father had done. A black laborer, Nicholas Stevenson, originally from Hampton, Virginia, was hired during the late 1880's to drive Cazier's carriage and to take care of the horses. Stevenson, his wife, and four of his children lived in the small gate-house. Mary Stevenson took care of the children and gardened, while Nicholas worked at the mansion.

The first decades of the twentieth century were not profitable years for Jacob Cazier. His carriage driver bought a small piece of land nearby in the 1910's, and worked as a laborer for other local farmers. Cazier sold off a number of farms and tracts of land, so that by the time of his death in 1918, his real estate holdings had diminished to 1,030 acres. Mount Vernon Place and the surrounding farmland was left to his daughter, who rented it to the Richard Biddle family.

No longer needed as a status symbol for the wealthy Cazier family, the gate-house was abandoned for a few years. The need for more tillable acreage in the 1930's caused the "shrinking" of the gate-house yard, from 600 square feet to 200 square feet. The small yard was well suited for the occupants of the tenant house during the twentieth century. Rudolf Stevenson and his wife were day laborers and had no children.

The advent of the automobile and accompanying road improvements caused the demise of the small, brick house in 1935. The state of Delaware bought the house and demolished it because the widening of Route 896 threatened the safety of the residents.

Absolute evidence concerning the function of the Cazier site dwelling as a gate-house/tenant house was well documented in the historical record. Information regarding the landowners, Henry and Jacob Cazier, was gained from tax assessments, state directories, town directories, population censuses, deed records, wills, photographs, written histories of the state of Delaware, and oral documentation.

Archival information regarding the tenants of the gate-house, however, was sparse. Tenants, if mentioned at all, were listed as either day laborers or tenants—no names were given. Despite the extent of the documentary record of the nineteenth century in comparison with earlier periods, the paucity of documented information about tenants has been recognized by archaeologists in the region (Taylor et al. 1987; Coleman et al. 1983; Catts and Custer 1990; Hoseth et al. 1990; and De Cunzo et al. 1992). The value of studying sites with recent occupation periods, such as the Cazier Tenancy site (1844 to 1935), has recently been recognized in several studies (Adams 1976, 1977; Askins 1985; Beaudry and Mrozowski 1987; Branstner and Martin 1987; Davidson 1982; Henry 1987a, 1987b). The Management Plan for Delaware's Historical Archaeological Resources (De Cunzo and Catts 1990) suggested that late period archaeological sites have important research potential and information value. Consideration of material evidence, such as architecture, landscape, and archaeological artifacts, provided supplementary, complementary, and alternative insights into daily life, cultural values and beliefs, social group identification and interaction, production processes and distribution networks (De Cunzo and Catts 1990:160).

Written and oral documentation revealed at least three tenant occupations of Cazier's gate-house. The first resident of the brick house acted as a gate-keeper for Henry Cazier. If gate-keeping was his only means of support was not evident. Architectural remains of the dwelling included a brick foundation, cellar, and bulkhead entrance. Based on unit excavations, the cellar fill was determined to be secondary refuse from the demolition of the house in the 1930's. The fill was a mixture of nineteenth and twentieth century artifacts that could not represent any single occupation.

Architectural alterations of the gate-house and the landscape were made by the tenants between 1844 and 1880. Oral documentation verified the archaeological evidence of a covered wooden porch was constructed over the bulkhead entrance on the south side of the house after 1865. Based on archaeological structural post remains, a wooden addition was made to the west side of the house. A small outbuilding, represented by structural post features, was constructed 30 feet west of the house. This building and adjacent privy, were separated from the inner active yard area and the dwelling by a central fenceline. The earliest privy (Feature 170) was located approximately 50 feet northwest of the house along the northern and western fenceline. The outer active yard was defined by northern, western, and southern fencelines that created a total yard area of 600 square feet. No deep, sealed features were

excavated that yielded undisturbed archaeological assemblages associated with the earliest tenants. The household refuse was probably deposited in the shallow trash midden (Features 37, 37a and 65), or in sheet middens identified by the high artifact density area north of the house that were later disturbed by plowing.

The tenants of the gate-house during the period from the late 1880's to the early 1910's did not substantially alter the earlier spatial pattern of the site. Nicholas Stevenson, listed in the 1890 census as a black, day laborer, was the horseman and carriage driver for Jacob Cazier. Mr. Stevenson worked at the mansion grounds and did not need extensive storage for equipment or machinery. The one outbuilding present on the tenant property would was enough storage for gardening tools or a few animals. Mrs. Stevenson and her daughters maintained a garden outside the fenceline, behind the privy area. It was unclear as to when the western addition to the brick house was constructed. It could have been built prior to the Nicholas Stevenson occupation, but the large size of his family suggested that the addition was a necessity. The function of the dwelling as Jacob Cazier's gate-house and its proximity to Glasgow-Summit Bridge Road (Route 896) governed the spatial pattern of the site during the late nineteenth and early twentieth centuries. The house and outbuildings would have probably been kept in good repair, to impress Jacob Cazier's visitors. The yard was also kept neat as part of Cazier's interest in appearances. Garbage would have been discarded north or west of the house, because the well and Route 896 were located east of the house and the tree-lined lane leading to the mansion was south of the house. Plow zone artifact distribution maps revealed high densities of all artifact types north and south of the northern fenceline.

The temporary abandonment of the tenant house from circa 1915-1925, generated the most dynamic changes in "yardscape". The less substantial wooden addition of the house, the outbuilding, and privy fell into disrepair, were torn down and removed. The farmland surrounding the fenced yard of the nineteenth century tenants expanded, leaving a small yard area for the new occupants of the house. A new privy was placed just ten feet from the northwest corner of the house. Rudolf Stevenson (nephew of Nicholas Stevenson) and his wife maintained a small garden north of the wire fence encompassing their small yard and house. Any archaeological remains of other twentieth century tenants, other than the privy (Features 36 and 173), were used as cellar fill, after the demolition of the house in 1936.

The minimum ceramic vessel function comparisons between the Cazier site and four rural tenant occupied sites in the region, the Temple, Williams II, Dickson II and Heisler sites, and one urban site, Lots 304 and 306 King Street, revealed that the Cazier site was unique among these sites. Vessel function and form analyses of the Cazier ceramic assemblage indicated that economic and ethnic factors were important in determining overall vessel assemblage trends. The black tenants of the Cazier site used more hollowwares than flatwares and more mugs/jugs than cups. These two patterns have been attributed to other poor and black occupations and probably reflect economic as well as ethnic factors. The range of vessel forms at the Cazier site, however, included platters tureens, tea pots, and other specialized serving wares not typically associated with black tenant sites.

One reason for the presence of specialized table wares at the Cazier site may have been the tenant's close association with the Cazier family. The black tenants of the gate-keeper's house appear to have enjoyed a relatively high level of material comfort more associated with their improved economic status than ethnicity.

Analysis of bottle function and form, however, was not as conclusive as the ceramic analyses. Rural sites, including the Cazier site, tended to have more food and beverage bottles than urban sites in nearby Wilmington and Christiana. These differences do not appear to be related to ethnic or economic factors. Rather, a higher incidence of bottle recycling and reuse in urban sites appear to have influenced these differences. This analysis may also reflect the differences in the social relationships and activities of rural and urban dwellers in Delaware during the late-nineteenth and early-twentieth centuries.

The analysis of the Cazier site data has implications for future regional historical archaeological research and methodologies. At the Cazier site, the excavation of a 25 percent random sample of the plow zone gave a reliable view of artifact distributions and spatial utilization patterns. This technique has proved invaluable to other excavated sites within the region as well (Shaffer et al. 1988; Catts and Custer 1990; Hoseth et al. 1990; De Cunzo et al. 1992). Future analysis at other sites using artifact distribution frequencies generated through a 25 percent sample can clarify diachronic spatial utilization of sites.

Soil chemical analysis of the plow zone and subsoil provided an additional dimension to the study of intra-site structure. Soil analysis, intact feature patterns, and artifact distributions provided a more complete understanding of site usage through time.

Analysis of the mortar fragments recovered from structural related features provided relative time periods of construction of the Cazier site buildings. This data alone did not provide exact time of construction, but was used to confirm dates provided by historical written and oral documentation, feature and artifact analysis. The analysis of mortar and plaster was developed and used with some success at the Allen site (Basalik, Brown and Tabachnick 1988). Mortar analysis has the potential to provide relative construction dates of additions and repairs. Mortar and plaster samples should be taken from sealed features, or directly from different walls of foundations and additions. More work is needed to refine this analytical technique.

Architectural historians discovered that comparisons of first-floor dimensions indicates dwellings and structures functioned historically as status symbols (Herman 1987a). The archaeological remains of foundations and structural posts provided a new source of information, as they represent buildings that do not survive as standing structures. The use of house dimension comparisons as indicators of the social class and status of a site's occupants within a community has been successfully used at other sites in the region (Catts, Hodny and Custer 1989; Catts and Custer 1990; Hoseth et al. 1990). Additional archaeological excavations at various types of domestic sites will provide a continuum of ranked house dimensions available for comparisons.

The difference-of-proportion analysis of glass and ceramic vessel function was used to measure the relative economic value of household assemblages thus, the economic status of the site's inhabitants. Statistical comparison of the vessel count percentages of each vessel type, rather than comparing straight vessel percentages, provided a more accurate interpretation and reflects a truer picture of economic status.

The growing data base provided by each new archaeological site and the insights offered by the data recovery excavations of the Cazier site can be used for comparisons. Then, the analytical techniques used in this report can be refined, modified or expanded to provide a clearer picture of past lifeways.

The data recovery excavations at the Cazier site (7NC-F-64) revealed at least three tenant occupations of the Cazier gate-house. Reconstruction of each households' domestic strategies was attempted utilizing data from the artifact assemblages, the distribution of the plow zone artifacts, soil chemistry, mortar composition, and the archaeological structural remains. Architectural and vessel function analysis comparisons with other tenant and black-occupied sites in the Middle Atlantic revealed diachronic and synchronic changes in diet, refuse, and consumption patterns. Information gained from these analyses have added to the growing data base concerning nineteenth and twentieth century rural tenant lifeways.